

REMARKS

Claims 1-4, 6-18, 20, and 34-43 will be pending upon entry of the present amendment. Claims 1, 6, 8, 11, 13, 16-18, and 20 have been amended, claims 5, 19, and 21-33 have been cancelled, and claims 34-43 are newly submitted herewith.

Claims 1-15 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Cunningham et al. (U.S. 6,746,891, hereafter *Cunningham*).

Claim 1 has been amended to incorporate additional subject matter, including that of claim 5. Amended claim 1 recites, in part, “forming, on top of a substrate of a semiconductor wafer, a sample element embedded in a sacrificial region, the sample element having a weakened region; [and] forming, on top of said sacrificial region, a body connected to said sample element at a point away from the weakened region.”

Cunningham fails to anticipate at least these elements of claim 1. The features of Cunningham cited by the Examiner as being analogous to the weakened region of claim 1 are recesses 158, 160, and 162 etched through the structural layer 142. However, these recesses are subsequently filled when conductive layer 166 is deposited, which will correct or compensate for any weakness that may have resulted from the initial recesses. Additionally, Cunningham fails to anticipate forming a body connected to the sample element, and in particular, connected at a point away from the weakened region. Accordingly, claim 1 is allowable over Cunningham, together with dependent claims 2-4, 6-18, 20, 34, and 35.

While the claims depending from claim 1 are allowable as depending from an allowable base claim, many of the dependent claims are also allowable on their own merit, apart from depending from claim 1. Claim 3 recites the second layer, from which the sample element is defined, as being a conductive material. In contrast, Cunningham teaches that the structural layer 142 is specifically non-conductive (see column 14, lines 23-25).

Claim 5 recites “making a region of said sample element configured to be weakened when the body and sample element are freed.” The regions indicated by the Examiner as corresponding to the weakened region of claim 5 are temporary, inasmuch as the apertures 158, 160, and 162 are filled with conductive material of layer 166 prior to the removal of the

sacrificial layer 136. Any weakness resulting from the formation of the apertures is corrected by the added structural strength of the conductive material. Thus, there is no weakened region when the structure is freed, as required in claim 5.

Claim 6 states that “making said weakened region comprises the step of defining a narrowing of said sample element.” Reference to Figure 16 of the present application shows an example of such a narrowed region, in plan view. Cunningham does not provide any plan view Figures, nor does it teach such a narrowing. Furthermore, even if the narrowing is considered as being in elevation, the apertures 158, 160, and 162 of Cunningham do not result in a narrowing, since they pass entirely through the structure, while other portions of the structure not visible in the cross sections presumably retain their original thickness. Accordingly, claim 6 is allowable over Cunningham.

Cunningham fails to teach notches as recited in claim 7. The cross-sectional views of Cunningham are inadequate to show such a feature, since a notch would be understood to refer to a feature formed along an outer surface of a structure, while the views of Cunningham do not provide sufficient information to determine the extent of any of the features in the dimension perpendicular to the plane of the drawings. Furthermore, Cunningham does not provide any indication that such features would be necessary or inherent in the structure taught. Accordingly, claim 7 is allowable over the cited art.

While the scope of claim 8 differs from that of claim 7, claim 8 is allowable for many of the same reasons provided in support of claim 7.

With reference to the stop layer recited in Claim 10, the Examiner points to a general mention of etch processes found in Cunningham. There is no indication that a stop is included in any structure that is analogous to the sample element of claim 10.

It will be clear to one of ordinary skill in the art that the term *epitaxial*, as used in the specification and claims of the present application includes in its scope mono- and polycrystalline silicon material grown in accordance with known methods. The term does not refer to oxides of silicon that are formed according to other known methods.

None of the text of column 14, lines 5-15, Figures 1U, 1V nor their accompanying texts make reference to an epitaxial layer as defined above. Accordingly, claims 13-15 are allowable over Cunningham.

Claim 16 has been amended to depend from claim 1 so that it may be considered with the present species. Claim 16 recites that “the sample element is configured to break under a preselected strain.” Cunningham is entirely silent regarding this limitation. Preselection of a breaking strain level is not inherent in the teachings of Cunningham, since Cunningham is not directed to any device configured to break, but rather teaches a beam structure that is configured to flex without breaking. Accordingly, claim 16 is allowable thereover.

Claims 17, 18, 34, and 35 each recite structures that are not disclosed or inherent in Cunningham, and are thus allowable thereover.

Independent claims 36, 40, and 42 each recite the limitations of the original claim 1, together with additional limitations that further distinguish the respective claim over Cunningham. Claim 36 recites that the sample element is conductive; claim 40 recites that the body is connected to the sample element through a via; and claim 42 recites that the sample element is configured to break when subjected to a preselected level of acceleration. For at least the reasons cited, each of these independent claims is allowable over Cunningham, together with their respective dependent claims.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited. In the event the Examiner finds informalities that can be resolved by telephone conference, the Examiner is urged to contact applicant’s undersigned representative at 206-694-4848 in order to expeditiously resolve prosecution of this application.

Application No. 10/650,275
Reply to Office Action dated September 30, 2005

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Respectfully submitted,

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